Amendments to the Claims

Amended claims are included on the Microsoft Word CD enclosed with this response.

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~~Claims~~

1. (currently amended): A pressurized loop solar collector system for delivering solar energy from a roof mounted panel to a domestic hot water tank including: a pressurization system capable of maintaining system pressures above atmospheric pressure to increase the boiling point of the heat transfer fluid; a fluid radiator/overflow/recovery apparatus to catch overflow heat transfer fluid and trapped air and return the fluid to the system while keeping air out; a heat transfer fluid to air radiator or solar collector air vents to prevent the solar collectors from overheating during no flow conditions; an antifreeze heat transfer fluid to prevent damage from freezing in winter environments; a flexible umbilical to connect solar collector and water tank heat exchanger together; a circulation pump; control system and a double walled internal heat exchanger which is adaptable to existing hot water tank, to deliver heat from the heat transfer fluid to the hot water tank.

2. (currently amended): A boiling activated radiator solar collector over-temperature protection system which includes a fluid radiator/overflow/recovery apparatus to catch overflow heat transfer fluid and trapped air and return the fluid to the system while keeping air out, utilizes no moving actuators, and includes a boiling gas/liquid separator, which allows steam to reach a liquid to air radiator and allows condensed water to be returned to the fluid loop.

3. (currently amended): A pressure activated solar collector over-temperature protection system which utilizes solar collector air dampers as moving parts, including: a pressure activated mechanical actuator, which opens before the systems regulated pressure is reached; and a set of damper valves, which control airflow over the solar collector panel, so when opened the sun's energy is dissipated to the flowing ambient air and when closed the sun's energy is delivered to the fluid loop and hot water tank.

4. (currently amended): A flexible umbilical assembly that carries and insulates the heat transfer fluid tubing while protecting it from the elements with a clamp-on "clam-shell" split pipe external covering and includes all electrical connections between the solar collector and the hot water tank.

5. (currently amended): The system according to claim 1, with a 220/115 VAC controller and pump and boiling activated over-temperature protection according to claim 2.

6. (currently amended): The system according to claim 1, with a 220/115 VAC controller and pump, with pressure activated over-temperature protection according to claim 3.

7. (currently amended): The system according to claim 1, with a photovoltaic panel and low voltage (12VDC) pump, with boiling activated over-temperature protection according to claim 2.

8. (currently amended): The system according to claim 1, with a photovoltaic panel and low voltage (12VDC) pump, with pressure activated over-temperature protection according to claim 3.